

A2
Amended

For a discussion of basic issues in similarity searching of sequence databases, see Altschul, et al (1994) Nature Genetics 6:119-129. For some applications, the BLAST algorithm is employed, with parameters set to default values. The BLAST algorithm is described in detail at the NCBI database. Advantageously, "substantial homology", when assessed by BLAST, equates to sequences which match with an EXCEPT value of at least e^{-7} , preferably about e^{-9} and most preferably e^{-10} or lower. The defaulted threshold for EXCEPT in BLAST searching is usually 10. --.

IN THE CLAIMS

✓ Please cancel claims 1-5 without waiver or prejudice.

Please amend claims 6-10 as follows:

A3

6. (Amended). The polynucleotide of claim 23, comprising a nucleotide sequence that has at least 95% identity to the polynucleotide of any one of (a) to (c).

7. (Amended). The polynucleotide of claim 23, wherein said polynucleotide encodes a G-protein coupled receptor (GPCR).

8. (Amended). The polynucleotide of claim 23, wherein the polynucleotide of any one of (a) to (c) is a probe or primer comprising at least 15 contiguous nucleotides.

9. (Amended). A vector comprising a polynucleotide of claim 23.

Rev B1

10. (Amended). A host cell transformed or transfected with the vector of claim 9, wherein said host cell expresses the polynucleotide of SEQ ID NO: 1 under conditions sufficient for expression of the polynucleotide.

Please amend claim 22 as follows:

A4

22. (Amended). A host cell genetically modified to increase expression of a DNA sequence encoding a protein of SEQ ID NO: 2.

✓ Please cancel claims 13-21, without waiver or prejudice.

Please add the following new claims 23-36:

A5
Sub B3

23. (New). An isolated or purified polynucleotide comprising a polynucleotide selected from the group consisting of:

- (a) a polynucleotide encoding the polypeptide as set forth in SEQ ID NO: 2;
- (b) a polynucleotide comprising a nucleotide sequence of SEQ ID NO: 1;
- (c) a polynucleotide encoding the polypeptide expressed by the DNA contained in the clone deposited as National Collections of Industrial and Marine Bacteria Limited (NCIMB) 41066;
- (d) a polynucleotide comprising a nucleotide sequence that has at least 90% identity to the polynucleotide of any one of (a) to (c);
- (e) a polynucleotide comprising a nucleotide sequence, wherein said polynucleotide is capable of hybridizing to the specific polynucleotide of any one of (a) to (d);
- (f) a complement of the polynucleotide of any one of (a) to (e); and
- (g) a contiguous polynucleotide fragment having at least fifteen nucleotides of the polynucleotide of any one of (a) to (f).

Sub C17 24. (New). An isolated or purified polynucleotide comprising a polynucleotide sequence which encodes the polypeptide of SEQ ID NO: 2.

25. (New). The isolated or purified polynucleotide of claim 24, wherein said polynucleotide comprises the polynucleotide of SEQ ID NO: 1.

26. (New). An isolated or purified polynucleotide of claim 23, wherein said polynucleotide encodes the polypeptide set forth in SEQ ID NO: 2.

27. (New). An isolated or purified polynucleotide comprising a polynucleotide sequence set forth in SEQ ID NO: 1.

28. (New). An isolated or purified polynucleotide of claim 23, wherein said polynucleotide is set forth in SEQ ID NO: 1.

29. (New). A host cell transformed or transfected with the vector of claim 9, further comprising culturing the host cell under conditions sufficient for the expression of the polypeptide of SEQ ID NO: 2 or a fragment thereof.

30. (New). A host cell comprising a functional disrupted endogenous gene encoding a polypeptide of SEQ ID NO: 2.

31. (New). An isolated or purified polynucleotide of claim 23, wherein said polynucleotide comprises a contiguous polynucleotide sequence having at least fifteen or greater than twenty-seven nucleotides of the polynucleotides of any one of (a) to (c).

32. (New). An isolated or purified polynucleotide comprising a polynucleotide encoding the polypeptide expressed by the DNA contained in the NCIMB deposit 41066.

33. (New). An isolated or purified polynucleotide of Claim 23, wherein said polynucleotide encodes the polypeptide expressed by the DNA contained in the NCIMB deposit 41066.

34. (New). An isolated or purified polynucleotide comprising a polynucleotide selected from the group consisting of:

- (a) a polynucleotide encoding the polypeptide as set forth in SEQ ID NO: 2;
- (b) a polynucleotide comprising a nucleotide sequence of SEQ ID NO: 1;
- (c) a polynucleotide encoding the polypeptide expressed by the DNA contained in the clone deposited as National Collections of Industrial and Marine Bacteria Limited (NCIMB) 41066;
- (d) a complement of the polynucleotide of any one of (a) to (c); and
- (e) a contiguous polynucleotide fragment having at least fifteen nucleotides of the polynucleotide of any one of (a) to (d).

35. (New). The polynucleotide of claim 23, comprising a polynucleotide selected from the group consisting of:

- (a) a polynucleotide comprising a nucleotide sequence of SEQ ID NO: 3;
- (b) a polynucleotide comprising a nucleotide sequence of SEQ ID NO: 4;
- (c) a polynucleotide comprising a nucleotide sequence of SEQ ID NO: 5; and
- (d) a polynucleotide comprising a nucleotide sequence of SEQ ID NO: 6.

36. (New). An isolated or purified polynucleotide selected from the group consisting of:

- (a) a polynucleotide comprising a nucleotide sequence of SEQ ID NO: 3;
- (b) a polynucleotide comprising a nucleotide sequence of SEQ ID NO: 4;
- (c) a polynucleotide comprising a nucleotide sequence of SEQ ID NO: 5; and